

I. AMENDMENTS

In the Claims

This listing of claims replaces all prior versions, and listings, of claims in the application:
Claims 1 – 52 (Canceled)

53. (Previously Presented). A passive intra-formation positioning collision avoidance system for a transponder-equipped host aircraft, the system comprising:

a data link transponder, said transponder generating broadcast data, the broadcast data comprising aircraft position; and

a passive traffic alert and collision avoidance system (TCAS) computer in communication with said transponder for receiving and processing the broadcast data from said transponder;

a mission computer unit in communication with said TCAS computer, wherein said mission computer unit receives the broadcast data from said TCAS computer and generates steering commands based on the broadcast data; and

a communication link in communication with said mission computer to transmit the steering commands to at least one other transponder-equipped aircraft for processing, the at least one other transponder-equipped aircraft capable of automatically executing the steering commands to position itself with respect to the host aircraft.

54. (Previously Presented). The system of Claim 53, wherein the communication link is a very high frequency (VHF) data link.

55. (Previously Presented). The system of Claim 53, wherein the communication link is an ultra-high frequency (UHF) data link.

56. (Previously Presented). The system of Claim 53, further comprising display means, said display means for displaying aircraft relative velocity.

57. (Previously Presented). The system of Claim 53, wherein the at least one other transponder-equipped aircraft is further equipped with station keeping equipment means for executing the steering commands to position the at least one other transponder-equipped aircraft with respect to the host aircraft.

58. (Previously Presented). The system of Claim 53, wherein the at least one other transponder-equipped aircraft is further equipped with automatic flight control station means for executing the steering commands to position the at least one other transponder-equipped aircraft with respect to the host aircraft.

59. (Previously Presented). The system of Claim 53, wherein the steering commands comprise commands used to maintain at least one of horizontal and vertical separation between the at least one other transponder-equipped aircraft and the host aircraft.

60. (Previously Presented). The system of Claim 53, wherein the at least one other transponder-equipped aircraft is identifiable by a unique Mode-S address identifier.

61. (Previously Presented). The system of Claim 53, wherein the broadcast data is automatic dependent surveillance broadcast (ADS-B) data.

62. (Previously Presented). The system of Claim 53, wherein the broadcast data is global positioning system (GPS) data.

63. (Previously Presented). The system of Claim 53, wherein the broadcast data is Mode-S squitter data.

64. (Previously Presented). The system of Claim 53, wherein the broadcast data is extended squitter airborne position data.

65. (Previously Presented). The system of Claim 53, wherein the broadcast data is extended squitter airborne velocity data.

66. (Previously Presented). The system of Claim 53, wherein said TCAS computer comprises an input/output interface, the input/output interface providing a data interface from said TCAS computer to the mission computer unit.

67. (Previously Presented). The system of Claim 56, wherein the display means displays informational data to an operator of the host aircraft, the informational data comprising the relative velocity of the at least one other transponder-equipped aircraft.